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TITLE: FLATTENING METHOD FOR PHOSPHORUS SILICATE GLASS FILM

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ABSTRACT:

PURPOSE: To solve problems regarding the disconnection of Al wiring,the increase of diffusion length or the reduction of the phosphorus concentration of the **PSG** by flowing the **PSG in steam** gas exceeding **atmospheric pressure**.

CONSTITUTION: A LOCOS oxide film 2, a gate oxide film 3 and a polycrystal

silicon gate layer 4 with approximately 6,000Å film thickness are formed onto a P type silicon substrate 1. The arsenic ions of the quantity of injection of 5×10<SP>15</SP>/cm<SP>2</SP> are injected at voltage such as
the acceleration voltage of 160KeV, and diffusion layers 5 functioning as drain and source regions are coated. The PSG 6 of the phosphorus concentration of 8mol% is further coated. The PSG 6 is flowed in a high pressure oeve for 10min
at 900°C in the steam of the gas pressure of 8kg/cm<SP>2</SP>. Lastly, the
PSG 6 is flowed in high-pressure steam, and the Al wiring 7 is formed, thus completing a MOS type transistor.

PATENT ABSTRACTS OF JAPAN

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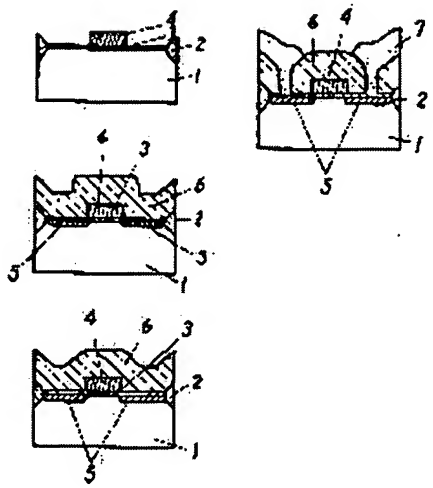
(54) FLATTENING METHOD FOR PHOSPHORUS SILICATE GLASS FILM

(57)Abstract:

PURPOSE: To solve problems regarding the disconnection of Al wiring,the increase of diffusion length or the reduction of the phosphorus concentration of the PSG by flowing the PSG in steam gas exceeding atmospheric pressure.

CONSTITUTION: A LOCOS oxide film 2, a gate oxide film 3 and a polycrystal silicon gate layer 4 with approximately 6,000Å film thickness are formed onto a P type silicon substrate 1. The arsenic ions of the quantity of injection of 5×1015/cm2 are injected at voltage such as the acceleration voltage of 160KeV, and diffusion layers 5 functioning as drain and source regions are coated. The PSG 6 of the phosphorus concentration of 8mol% is further coated. The PSG 6 is flowed in a high pressure oeve for 10min at 900°C in the steam of the gas pressure of 8kg/cm2. Lastly, the PSG 6 is flowed in high-pressure steam, and the Al wiring 7 is formed, thus completing a MOS type transistor.



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